

This listing of the claims replaces all prior versions in the application.

**Listing of Claims:**

1. (Currently Amended) A magnetic resonance imaging (MRI) guidewire, comprising:  
a connector having a non-magnetic body;  
~~an inner conductor extending at least a major length of the guidewire;~~  
~~an outer conductor coaxially disposed about the inner conductor extending at least a major length of the guidewire;~~  
a guidewire having a distal end sized and shaped for insertion into a subject to receive MRI signals[[:]] and a proximal end sized and shaped for insertion into [[a]] the connector;  
~~the connector having a non-magnetic body, the guidewire having an inner conductor~~  
extending at least a major length of the guidewire and an outer conductor coaxially disposed about the inner conductor extending at least a major length of the guidewire;  
the proximal end of the guidewire having:  
    an outer conductor contact coupled electrically to the outer conductor; and  
    an extended section of the inner conductor that extends axially beyond the outer conductor contact, the extended section including:  
        an inner conductor contact having an electrically conductive material disposed at least partially around the inner conductor; and  
        an insulated area interposed between the outer conductor contact and the inner conductor contact, and having an electrically insulating material disposed at least partially around the inner conductor;  
wherein the distal end of the guidewire defines an antenna configured to detect MRI signals and the inner and outer conductors are configured to conduct the detected MRI signals to the proximal end of the guidewire.

2. (Currently Amended) The guidewire of claim 1, wherein the guidewire diameter is

sized for insertion into [[the]] a lumen of an anatomic structure of a subject, wherein the inner conductor contact with the inner conductor contact have a diameter that is greater than a diameter of the inner conductor residing under the outer conductor.

3. (Previously Presented) The guidewire of claim 1, wherein the guidewire is sized and configured for insertion into a blood vessel.

4. (Previously Presented) The guidewire of claim 2, wherein the guidewire is sized and configured for insertion into a human subject.

5. (Original) The guidewire of claim 1, wherein the guidewire diameter is less than about 0.040 inches.

6. (Original) The guidewire of claim 5, wherein the diameter is between about 0.012 inches and 0.038 inches.

7. (Original) The guidewire of claim 6, wherein the diameter is about 0.014 inches.

8. (Original) The guidewire of claim 1, wherein a diameter of the inner conductor is between about 0.004 inches and about 0.012 inches.

9. (Original) The guidewire of claim 1, wherein the guidewire has a stiffness sufficient for insertion into a lumen of an anatomic structure of a subject.

10. (Currently Amended) The guidewire of claim 1, wherein the guidewire is biocompatible and is detachably affixed to the connector.

11. (Original) The guidewire of claim 1, wherein the guidewire comprises a conductive material.

12. (Original) The guidewire of claim 1, wherein the guidewire is composed of nonmagnetic materials.

13. (Original) The guidewire of claim 1, wherein the guidewire comprises a superelastic material.

14. (Original) The guidewire of claim 13, wherein the superelastic material comprises titanium.

15. (Original) The guidewire of claim 13, wherein the superelastic material comprises Nitinol.

16. (Currently Amended) The guidewire of claim 1, wherein the guidewire comprises a material that is sterilizable.

17. (Original) The guidewire of claim 1, wherein the outer conductor contact and the inner conductor contact are each annular in shape.

18. (Original) The guidewire of claim 17, wherein the outer conductor contact and the inner conductor contact have approximately equal diameters.

19. (Original) The guidewire of claim 17, wherein the inner conductor contact is disposed radially about a portion of the extended section of the inner conductor.

20. (Original) The guidewire of claim 1, wherein the insulated area is annular in shape.

21. (Original) The guidewire of claim 1, wherein the outer conductor contact is axially

distal to the inner conductor contact.

22. (Original) The guidewire of claim 1, further comprising an extension attachment coupled to the proximal end of the guidewire.

23. (Previously Presented) The guidewire of claim 1, wherein the guidewire is releasably engageable to different connectors, and wherein the guidewire, connector or guidewire and connector comprises an identification system, comprising at least one of the following: (a) a predetermined size and/or shape of an orifice of the connector to allow insertion of only appropriately configured guidewires; or (b) a guide wire sensor that recognizes electrically or electronically encoded parameters in the guidewire parameter that is at least one of the following: an electrical circuit, a mechanical configuration, optical or visual indicia, whereby the identification system parameter allows assembly only for proper combinations of guidewires and connectors ~~a suitable connector and guidewire combination.~~

24. (Currently Amended) The guidewire of claim ~~[[23]]~~ 1, wherein the guidewire is releasably engageable to a connector a plurality of times over an interventional procedure to allow different medical devices to be loaded onto and removed from the guidewire, and wherein the connector includes a wiper in communication with the guidewire to allow the guidewire to slidably advance therethrough to inhibit the introduction of fluids into the connector ~~wherein the identification parameter comprises at least one of a resistor value or, a digital signature, or a unique serial number.~~

25. (Currently Amended) An MRI compatible medical coaxial cable, comprising:  
a connector having a non-magnetic body;  
the coaxial cable having opposing proximal and distal ends with the proximal end sized and shaped for insertion into the connector, the coaxial cable having an inner conductor extending at least a major length of the coaxial cable and an outer conductor coaxially disposed about the inner conductor and extending at least a major length of the coaxial cable;

and,

wherein

~~a proximal end of the coaxial cable sized and shaped for insertion into the [[a]]~~  
~~connector, the connector having a non-magnetic body, the proximal end of the coaxial cable~~  
hashaving:

an outer conductor contact coupled electrically to the outer conductor; and

an extended section of the inner conductor that extends axially beyond the  
outer conductor contact, the extended section including:

an inner conductor contact having an electrically conductive material  
disposed at least partially around the inner conductor, wherein the inner  
conductor contact and the inner conductor define a diameter that is greater  
than a diameter of the inner conductor residing under the outer conductor; and

an insulated area positioned to isolate electrically the outer conductive  
contact from the inner conductive contact, and having an electrically insulating  
material disposed at least partially around the inner conductor,

wherein the coaxial cable is configured to conduct MRI signals from a distal end  
portion to the proximal end.

26. (Previously Presented) The guidewire of claim 1, wherein the inner conductor is a  
center conductor.

27. (Previously Presented) The guidewire of claim 1, wherein the connector is in  
communication with an MRI interface circuit or includes an MRI interface circuit and is  
configured to attach to an MRI scanner and allow transmission of the received MRI signals  
thereto.

28. (Previously Presented) The guidewire of claim 1, wherein the connector is  
releasably attachable to the outer and inner conductors whereby different medical devices can  
be serially removed from and attached to the guidewire.

29. (Previously Presented) The guidewire of claim 1, in combination with an MRI scanner, the connector in electrical communication with the MRI scanner, wherein the connector comprises electrical shielding configured to inhibit RF interference when the guidewire is in operative use with the MRI scanner.

30. (Currently Amended) The guidewire of claim 23, wherein the identification ~~system~~ parameter is configured to identify that a proper connector and guidewire combination is used. includes the guidewire sensor.

31. (Previously Presented) The guidewire of claim 1, wherein the connector comprises an MRI scanner interface circuit, and wherein at least one of the guidewire or connector comprises a connection detector that identifies when the guidewire is disconnected from the interface circuit.

32. (Currently Amended) The guidewire of claim 1, ~~wherein the connector or guidewire or connector and guidewire include a identification parameter that is at least one of the following: an electrical circuit, a mechanical configuration, optical or visual indicia, whereby the identification parameter allows assembly only for a suitable connector and guidewire combination;~~ wherein the connector includes a guidewire sensor that recognizes an electrically or electronically encoded serial number associated with the guidewire that wherein the identification parameter is unique to a specific guidewire to thereby limit a respective guidewire to a single-use.

33. (Previously Presented) The coaxial cable of claim 25, wherein the inner conductor is a center conductor.

34. (Previously Presented) The coaxial cable of claim 25, wherein the connector is sized and configured to receive the proximal end of the coaxial cable and is in

communication with an MRI interface circuit and is configured to attach to an MRI scanner and allow transmission of received MRI signals from a distal end portion of the coaxial cable to the MRI scanner.

35. (Previously Presented) The coaxial cable of claim 25, wherein the connector comprises electrical non-magnetic conductive shielding configured to inhibit RF interference when the guidewire is in operative use in an MRI scanner, and wherein the coaxial cable is configured to be inserted into a patient.

36. (Previously Presented) The coaxial cable of claim 25, wherein the connector comprises an MRI scanner interface circuit, and wherein at least one of the coaxial cable or connector comprises a connection detector that identifies when the cable is disconnected from the interface circuit.

37. (Currently Amended) The coaxial cable of claim 25, wherein the coaxial cable comprises an identification system comprising at least one of the following: (a) a predetermined size and/or shape of an orifice of the connector to allow insertion of only appropriately configured coaxial cables; or (b) a guidewire sensor that recognizes electrically or electronically encoded parameters in the cable to ensure proper combinations of cables and connectors ~~a mechanical, electrical, visual or optical identification parameter~~ to thereby control assembly to a suitable connector or inhibit re-use of the coaxial cable.

38. (Currently Amended) The coaxial cable of claim 37, wherein the coaxial cable is a single-use disposable medical device, and wherein the identification system includes the guidewire sensor and a serial number ~~parameter~~ ~~is unique to a specific cable and is used to~~ limit a respective cable to ~~[[the]]~~ single-use.

39. (Previously Presented) The guidewire of Claim 1, wherein the non-magnetic body of the connector comprises a conductive material to shield against RF interference.

40. (Previously Presented) The guidewire of Claim 1, wherein the connector includes an MRI scanner interface circuit in communication with the inner and outer conductor.

41. (Previously Presented) The guidewire of Claim 1, wherein the connector comprises a DC blocking circuit in communication with the inner and outer conductor configured to communicate with an MRI Scanner and block DC voltage from the outer conductor.

42. (Previously Presented) The coaxial cable of Claim 25, wherein the non-magnetic body of the connector comprises a conductive material to shield against RF interference.

43. (Previously Presented) The coaxial cable of Claim 25, wherein the connector includes an MRI scanner interface circuit in communication with the inner and outer conductor.

44. (Previously Presented) The coaxial cable of Claim 25, wherein the connector comprises a DC blocking circuit in communication with the inner and outer conductor configured to communicate with an MRI Scanner and block DC voltage from the outer conductor.

45. (Withdrawn) A connector in combination with an intrabody guidewire or medical coaxial cable for connecting a conductor associated with the guidewire or cable ~~an intrabody lead, catheter or probe~~ to an MRI scanner, the connector comprising a non-magnetic body with a conductive material defining an RF shield and a DC blocking circuit configured to block DC voltage transmission from the MRI scanner to the ~~the~~ [[a]] conductor ~~in the intrabody lead, catheter or probe~~.